

U.S. Patent Application Serial No.: 09/963,710
Amendment filed December 9, 2004
Reply to OA dated September 10, 2004

REMARKS:

Claims 1-14 are currently being considered, of which claims 1, 2, 5, and 7-12 have been amended. No new claims have been added. Applicants believe that no new matter has been introduced.

Before turning to the cited art, a brief review of the present invention is in order. The present invention relates to an inspection apparatus inspecting whether or not terminals are mounted on **predetermined places** (see specification: p. 52, lines 6-9). In the present invention, the location of a fuse 14 is a relevant factor when determining whether a junction box 12 is good or is not good. The present invention decides whether fuse 14, **in a particular location** on junction box 12, is satisfactory or not (see specification: p. 34, lines 3-11; p. 52, lines 6-9; p. 57, lines 7-12; and Figs. 3, 10). The table of "Normal Data" shown in Fig. 3 is utilized during the evaluation of fuse 14, and the "Normal Data" includes "section to be inspected" and a corresponding "item symbol".

Claims 1 and 2 stand rejected under 35 USC 102(b) as anticipated by USP 5,495,424 (**Tokura**).

Claims 3, 7, 9, and 11 stand rejected under 35 USC 103(a) as obvious over **Tokura**.

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Claims 4-6, 8, 10, and 12-14 stand rejected under 35 USC 103(a) as obvious over **Tokura** in view of USP 5,369,430 (**Kitamura**).

Applicants respectfully traverse the rejections of claims 1-14.

In **Tokura**, a location of a solder portion 4 on printed circuit board 1 is not a key consideration regarding the quality of the solder portion. That is, when a solder portion is located, the solder portion is deemed to be good or not good regardless of its location on the printed circuit board.

Kitamura is directed to accomplishing “focus detection to a particular pattern or a particular object irrespective of the position thereof in the image field” (col, lines 59-63)(emphasis added). Thus, an aspect of **Kitamura** is similar to **Tokura** in that, once a pattern is located, the location of that pattern is not a key consideration in the evaluation of that pattern.

In the present invention, contrary to **Tokura** and **Kitamura**, the location of a fuse 14 is an important factor when determining whether a junction box 12 is good or not good. For example, the present invention decides whether fuse 14, in a particular location on junction box 12, is satisfactory or not. The specification discusses this in several locations, for example: p. 34, lines 3-11; p. 52, lines 6-9; p. 57, lines 7-12; and Figs. 3, 10. The table of “Normal Data”

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shown in Fig. 3 (including the “section to be inspected” and a corresponding “item symbol”) is utilized during the evaluation of fuse 14.

In the present invention, claim 3, as originally filed, features the “normal data” (lines 7-10, 14-16) which is utilized in the judging of the quality of the mounting state of the electric parts.

Accordingly, **Tokura** and **Kitamura**, alone or in combination, do not describe, teach, or suggest the “**normal data**” and the use of that “**normal data**” as disclosed by the present invention.

Tokura and **Kitamura**, alone or in combination, fail to describe, teach, or suggest the following features set forth in claim 1, as amended: “storing normal data including a plurality of sections to be inspected, wherein each of the sections to be inspected corresponds to at least one proper one of the item symbols; and judging whether or not an electric part to be inspected at a section to be inspected is non-defective, in dependence upon an image of the electric part to be inspected, the section to be inspected, the image consulting data, and the normal data”, in combination with the other claimed features.

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Tokura and Kitamura, alone or in combination, fail to describe, teach, or suggest the following features set forth in claim 2, as amended: “storing normal data including a plurality of sections to be inspected, wherein each of the sections to be inspected corresponds to at least one proper one of the item symbols; comparing an image of an electric part to be inspected at a section to be inspected and the plurality of the images of the non-defective electric part; extracting an image most analogous to the image of the electric part to be inspected from the plurality of the images of the non-defective electric part; and judging whether or not the electric part to be inspected is non-defective, in dependence upon the most analogous image, the image of the electric part to be inspected, the section to be inspected, the image consulting data, and the normal data”, in combination with the other claimed features.

Tokura and Kitamura, alone or in combination, fail to describe, teach, or suggest the following features set forth in claim 3, as originally filed: “extraction means for (1) storing image consulting data containing a plurality of images including said marks of the electric parts of all the item symbols to be mounted in the electric junction box as a subject of the inspection and normal data indicating the proper item symbols of the electric parts mounted on the corresponding mounts ... ; and judgment means for judging the quality of the mounting state of the electric parts on the mount by comparing the item symbol of the electric part having the most analogous image and said normal data”, in combination with the other claimed features.

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Tokura and **Kitamura**, alone or in combination, fail to describe, teach, or suggest the following features set forth in claim 5, as amended: “extraction means for (1) storing image consulting data including a plurality of item symbols wherein each of the item symbols corresponds to at least one of a plurality of images of non-defective electric parts, and storing normal data including a plurality of mounts to be inspected wherein each of the mounts to be inspected corresponds to at least one proper one of the item symbols, and for (2) comparing the image, including said mark, of the electric part mounted on the mount to be inspected picked up by the image pickup means and the images of the non-defective electric parts in the image consulting data by a method of normalization correlation, and for (3) extracting the highest correlation value out of the correlation values obtained by the method of normalization correlation; and judgment means for judging the quality of the mounting state of the electric parts on the mount in dependence upon the highest correlation value, the image consulting data, and the normal data”, in combination with the other claimed features.

Tokura and **Kitamura**, alone or in combination, fail to describe, teach, or suggest the following features set forth in claim 7, as amended: “extraction means for (1) storing image consulting data including a plurality of item symbols wherein each of the item symbols corresponds to at least one of a plurality of images of non-defective terminal fittings mounted on the insulator, and storing normal data including a plurality of mounts to be inspected wherein each of the mounts to be inspected corresponds to at least one proper one of the item symbols,

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and for (2) comparing the image of the terminal fittings picked up by the image pickup means and the plurality of the images of non-defective terminal fittings in the image consulting data, and for (3) extracting an image most analogous to the image of the terminal fittings picked up by the image pickup means from the images in the image consulting data; and judgment means for judging the quality of the mounting state of the terminal fittings on the insulator in dependence upon the most analogous image, the image of the terminal fittings picked up by the image pickup means, the image consulting data, and the normal data”, in combination with the other claimed features.

Tokura and Kitamura, alone or in combination, fail to describe, teach, or suggest the following features set forth in claim 9, as amended: “second extraction means for (1) storing second image consulting data including a plurality of item symbols wherein each of the item symbols corresponds to at least one of a plurality of images of non-defective terminal fittings, to which the electric wire is pressure-welded, mounted on the insulator, and storing normal data including a plurality of mounts to be inspected wherein each of the mounts to be inspected corresponds to at least one proper one of the item symbols, and for (2) comparing the image of the terminal fittings, to which the electric wire is pressure-welded, picked up by the image pickup means and the plurality of images of non-defective terminal fittings, to which the electric wire is pressure-welded, in the second image consulting data, and for (3) extracting an image most analogous to the image of the terminal fittings, to which the electric wire is pressure-welded,

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picked up by the image pickup means from the images in the second image consulting data; and second judgment means for judging the quality of the pressure-welding state of the electric wire to the terminal fittings, to which the electric wire is pressure-welded, mounted on the insulator in dependence upon the most analogous image, the image of the terminal fittings, to which the electric wire is pressure-welded, mounted on the insulator picked up by the image pickup means, the second image consulting data, and the normal data”, in combination with the other claimed features.

Tokura and Kitamura, alone or in combination, fail to describe, teach, or suggest the following features set forth in claim 11, as amended: “extraction means for (1) storing image consulting data including a plurality of item symbols wherein each of the item symbols corresponds to at least one of a plurality of images of non-defective terminal fittings mounted on the insulator, and storing normal data including a plurality of mounts to be inspected wherein each of the mounts to be inspected corresponds to at least one proper one of the item symbols, and ... ; judgment means for judging the quality of the mounting state of the terminal fittings on the insulator in dependence upon the most analogous image, the image of the terminal fittings picked up by the image pickup means, the image consulting data, and the normal data”, in combination with the other claimed features.

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Thus, Applicants respectfully submit that the rejections of claims 1-14 should be withdrawn.

Applicants have herein amended the title on file with the USPTO to cause it to conform with the title shown on page 1 of the specification of the present application.

In view of the aforementioned amendments and accompanying remarks, claims, as amended, are in condition for allowance, which action, at an early date, is requested.

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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